REMARKS

Claims 1-20 are present in this application with claims 9-17 and 19 being withdrawn for being directed to a non-elected invention. Applicants reserve the right to file a divisional application directed to the non-elected invention including at least claims 9-17 and 19. Clarifying amendments have been made to claims 1, 3 and 4. Reconsideration and allowance of the claims 1-8, 18 and 20 of the present application as amended are earnestly solicited in view of the following remarks.

The drawings stand objected under 37 CFR § 1.83(a). It is alleged in this objection that the drawings fail to show a resonant cavity, magnetron source, magnetic flux with a spiral copper antenna, power supply and a ceramic chuck as described in the present specification. However, these elements are conventional features that are disclosed but not claimed in the present application. These elements are described in the present specification to provide the environment for the present invention and are not essential for fully understanding the claimed invention. Therefore, it is respectfully submitted that a detailed illustration of these unclaimed features is not essential for a proper understanding of the present invention as 37 CFR § 1.83(a) only requires that every feature of the invention specified in the claims be shown in the drawings. Accordingly, it is respectfully requested that the objection to the drawings be reconsidered and withdrawn

Claims 3 and 4 stand objected for informalities each noted on line 2 of the respective claims. The informalities noted in this objection have been amended as suggested to provide antecedent basis. Accordingly, it is respectfully that the objection to claims 3 and 4 be reconsidered and withdrawn.

Claims 1-8, 18 and 20 stand rejected under 35 U.S.C. §112, first paragraph, for failing to comply with the enablement and written description requirements, and under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, it is alleged that the specification does not describe the time range of "rapid" in the low temperature rapid thermal annealing. However, it is respectfully submitted that it is known to one skilled in the art would understand that rapid thermal annealing (RTA) occurs relatively quickly, in minutes or seconds, as described for example at

column 2, lines 51-56 of U.S. Patent No. 6,225,197 to Maekawa. The RTA for the claimed invention falls within this ranges and is typically for a duration of 1-300 seconds. It is further alleged that the present specification does not provide any range for a frequency in the microwave frequency band and a frequency in the radio frequency (RF) band. However, it is respectfully submitted that one skilled in the art understands and knows that the microwave frequency band to be in a range from 2 GHz to 300 GHz and the RF frequency band is in a range from 3 kHz to 300 GHz. Such information is generally known and can be readily found in technical reference books and at locations such as www.techdictionary.com. Accordingly, it is respectfully submitted that claims 1-8, 18 and 20 are in compliance with the requirements of 35 U.S.C. §112, first and second paragraphs, and it is respectfully requested that these rejections be reconsidered and withdrawn.

Claims 1, 2, 5-8, 18 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,066,547 to Maekawa and claims 3 and 4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Maekawa. These rejections are respectfully traversed.

Claim 1 of the present application recites a method for annealing a semiconductor structure comprising the steps of subjecting the semiconductor structure at an oscillating electromagnetic field and applying a LTRTA process to the semiconductor structure. Similarly, claim 18 of the present application recites a method for processing a semiconductor structure comprising the steps of subjecting the structure to athermal heating and applying a LTRTA process thereto. The utilization of electromagnetic fields or athermal heating induce current flow through the semiconductor structure to cause ohmic collisions between high energy electrons and the semiconductor lattice structure to provide rapid heating from within the structure. The LTRTA is performed to further repair the semiconductor structure and to minimize diffusion. The combination of subjecting the semiconductor to electromagnetic fields and applying a LTRTA process thereto cures structural defects, activates the dopant material, repairs the lattice structure and minimizes differences between the as-implanted junction depth and the post annealing junction depth as compared to known RTA methods.

Maekawa is relied upon to disclose a method for annealing amorphous silicon films to produce polycrystalline films suitable for thin film transistors fabricated on glass substrates. Specifically, column 6, lines 49-67 of Maekawa discloses that a silicon film and nickel film structure are annealed for a short duration, less than 30 seconds. This is done to minimize the penetration of nickel into the dielectric material as the inclusion of nickel in the dielectric material degrades the electrical isolating function of the dielectric. However, Maekawa does not disclose the combination of subjecting the semiconductor structure to an oscillating field or athermal heating and applying a LTRTA process thereto as recited in claims 1 and 18 of the present application. As a result, Maekawa does not suggest or imply a method for curing structural defects, activating the dopant material, repairing the lattice structure and minimizing differences between the as-implanted junction depth and the post annealing junction depth as recited by the method in claims 1 and 18 or the present application. Accordingly, it is respectfully submitted that claims 1 and 18 along with their dependent claims 2-8 and 20 patentably define over Maekawa for at least the reasons set forth above and it is respectfully requested that these rejections be reconsidered and withdrawn.

In view of these amendments and for all of the above stated reasons, it is respectfully submitted that all of the outstanding objections and rejections have been overcome. Therefore, it is respectfully requested that claims 1-8, 18 and 20 of the present application be passed to issue.

If any issues remain unresolved, the Examiner is requested to telephone the undersigned attorney. Please charge any additional fees or credit any overpayments to deposit account No. 50-0896.

Respectfully submitted,
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